

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION**

ORDER No. 94-050  
WASTE DISCHARGE REQUIREMENTS  
AND RECISION OF ORDER NO. 73-77:

CITY OF SANTA CLARA and  
MISSION TRAIL WASTE SYSTEMS  
SANTA CLARA ALL PURPOSE LANDFILL  
INACTIVE CLASS III SOLID WASTE DISPOSAL SITE  
SANTA CLARA, SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board), finds that:

1. The City of Santa Clara is the property owner of Santa Clara All Purpose Landfill (All Purpose Landfill). Mission Trail Waste Systems is the operator of All Purpose Landfill. Both the City of Santa Clara and Mission Trail Waste Systems are hereinafter called dischargers. The site is located south of State Highway 237 between San Tomas Aquinas Creek and the Guadalupe River and is subdivided into five parcels as shown on Figures 1 and 2. Figures 1 and 2 are incorporated herein and made part of this Order.

**PURPOSE**

2. As of October 1, 1993, All Purpose Landfill ceased accepting waste and has begun implementing final closure/post closure maintenance activities (e.g., capping, leachate management, monitoring). These closure activities are detailed in the discharger's *Final Closure and Post Closure Maintenance Plan for Parcel 3/6 and Parcel 1* (Closure Plan) prepared by Emcon Associates. The California Integrated Waste Management Board is the lead agency regarding review and approval of the above Plan. The purpose of this Order is to supplement the Closure Plan regarding four general issues: (1) groundwater and surfacewater monitoring, (2) closure of Parcels 2 and 4, (3) leachate collection and (4) closure construction scheduling. See Finding 10 for a discussion of these issues.

**BACKGROUND**

3. The All Purpose Landfill opened in 1934 as an open-burn dump. The operation was changed to a sanitary landfill after the Board adopted Resolution No. 713 in December 1965. This Resolution permitted the City to operate a sanitary landfill on Parcel 4. The landfill stopped accepting waste on October 1, 1993.
4. Between 1965 and 1986, the Board issued five separate Orders as listed below. These Orders included specifications regarding landfill construction, operation and closure.

- o September 22, 1965, Resolution No. 713 - Permitting Disposal in Parcel 4.
  - o December 27, 1973, Order No. 73-77 - Waste Discharge Requirements Permitting Disposal in Parcels 1,2,3,5,6,and 7.
  - o June 19, 1985, Order No. 85-78 - Amendment to Order No. 73-77 specifying closure requirements for Parcels 1 and 2.
  - o March 19, 1986, Order No. 86-15 - Amendment to Order No. 73-77 specifying construction standards for Parcel 3/6.
  - o August 20, 1986, Order No. 86-66 Amendment to Order Nos. 85-15 and 73-77 approving a "dendritic" rather than "blanket" leachate collection and recovery system in Parcel 3/6.
5. The 210 acre All Purpose Landfill has a total inplace volume of roughly 11 million cubic yards of waste (including daily cover soil). Waste thickness is on the order of 60-80 feet and extends as much as 25 feet below sea level in Parcel 1. The depth of waste varies at the site due to both the depth of the initial excavation and subsidence caused by the weight of the disposed waste. According to Order 73-77, Parcels 2 and 4 were constructed by "[excavating] the disposal areas to a depth of 5-10 feet below natural grade, dewater[ing] excessive groundwater and fill[ing] the areas to [an] average height of approximately 15 feet above the existing ground surface<sup>1</sup>." A description of each of the five parcels is shown on the Table below:

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<sup>1</sup> The landfill was eventually filled to a height of approximately 40-50 feet above the ground surface.

### Santa Clara All Purpose Landfill - Description of Parcels

PARCEL No.	ACRES	OPERATION DATES	LEACHATE MONITORING & COLLECTION SYSTEM	POST CLOSURE LANDUSE	EST. BASE GRADE (FT. MSL)
1 NW	8	1991-1993	blanket w/pipe	Open Space	+/-0
1	35	1982-1991	1 leachate monitoring well	Open Space	-15 to -25
2	40	1977-1984	3 leachate monitoring wells	Golf Course	-5 to -10
3/6	46	1986-1991	dendritic w/pipe	Open Space	+/-0
4	68	1965-1977	2 leachate monitoring wells	Golf Course	-5 to -10

Note: Parcels 5 and 7 never received waste.

6. Between 1934 and October 1993 waste material including municipal waste, construction debris, and non-hazardous industrial and commercial waste was disposed of at the site. In addition, DTSC and RWQCB file information indicate that potentially hazardous materials were disposed of at the site a number of times in the last 25-30 years. For example, according to a 1986 DTSC Preliminary Assessment Summary (EPA, 1989), Ford Aerospace disposed of an unknown quantity of unspecified solvents, organics, inorganics, heavy metals, acids and bases in the general vicinity of Parcel 4 of All Purpose Landfill in the 1970's.

### HYDROGEOLOGY

7. Regional Hydrogeology The site is located in the Santa Clara Valley on levee and overbank/flood basin deposits. The site is on a low lying, relatively flat portion of the valley near the boundary where alluvial fan deposits merge and interfinger with estuarine deposits. There are no known faults beneath the landfill. The closest fault to the landfill is the Silver Creek Fault (CDMG, 1992) located 1.5 miles east of the landfill.

The Santa Clara Valley is filled with alluvial deposits from the adjacent mountain ranges and with marine deposits from the San Francisco Bay. These deposits are up to 1,500 feet in thickness. At the base of the adjacent mountains, gently sloping alluvial fans of the basin tributaries laterally merge to

form an alluvial apron extending into the interior of the basin (Helley, 1979). Water-bearing deposits are typically associated with stream channel and levee deposits, while aquitards are commonly composed of overbank deposits and bay mud.

Shallow groundwater in the vicinity of the landfill is generally encountered between 10-20 feet below ground surface. Regional groundwater flow is northward toward San Francisco Bay.

The Santa Clara Valley groundwater basin is divided into two broad areas: 1) the forebay and 2) the confined area (Santa Clara Valley Water District, 1989). The forebay occurs along the elevated edges of the basin where the basin receives its principal recharge. The confined area is located in the flatter interior portion of the basin and is stratified or divided into various water bearing zones, separated by aquitards of local to regional extent. The confined area is broadly divided into the upper and lower aquifer zones, separated by an extensive regional aquitard that occurs at a depth of about 150 feet to 250 feet bgs in the center of the confined area and beneath San Francisco Bay. The upper zone additionally contains smaller, thinner and less extensive water bearing units typical of stream channel deposition, commonly identified as A, B, C, etc., level aquifers. The onsite groundwater pollution at All Purpose Landfill has been detected in the A and B zones (See Finding 9). Municipal water supply wells are generally completed in the lower aquifer zone with individual domestic supply wells in the upper zone.

The closest municipal supply well is the City of Santa Clara's Well No. 33 located 1500 feet south of the landfill. Shallow groundwater in the vicinity of the site has been affected by sea water intrusion (SCVWD, 1980). Thus it is unlikely that any municipal supply wells would be installed in the vicinity of the All Purpose Landfill.

8. Site Hydrogeology Shallow sediments beneath the site are characterized by silty to sandy clay and sandy clay and lesser amounts of sand and gravelly sand. The water level elevation drops from 1 foot above mean sea level in the southwest portion of the site to 6 feet below MSL in the northeast portion of the site. The subsurface geologic conditions beneath the site have been characterized by exploratory drilling for engineering and groundwater studies. Approximately 200 borings have been drilled at or near the All Purpose Landfill where geologic logs are available. The majority of the borings were shallow geotechnical borings for characterizing the perimeter of Parcels 1,2, and 3/6.

According to the geologic mapping of Helley (1989) the sediments underlying All Purpose Landfill consist of Holocene age levee and floodplain deposits. Natural levee deposits border the channels of Guadalupe River and San Tomas Aquinas Creek (sandy to silty clay). Floodbasin deposits consist of organic-rich clay to very fine silty-clay deposits occupying the lowest topographic position

between the Holocene natural levee deposits.

The City has installed 19 shallow groundwater monitoring wells (G-1 through G-19) to monitor the first or "A" water bearing zone. The City has also installed 6 deeper monitoring wells (H-1 through H-6) screened to a depth of between 52 and 104 feet below existing grade. Lastly, there are 6 leachate monitoring wells (L-1 through 6) that will be used to monitor the depth of leachate and possibly for leachate extraction. Only parcels 3/6 and 1NW have a leachate collection system.

Groundwater beneath the landfill flows north north-east consistent with the regional northward flow. Shallow groundwater is encountered at depths of approximately 3 feet above sea level near the southwest portion of the landfill and drops to approximately 4 feet below sea level near the northeast portion of the landfill. Waste in parcels 1, 2 and 4 extend below the water table. The highest groundwater velocities (from 650 to 1190 feet per year) are present in shallow deposits beneath Parcel 3/6 and Parcel 4. The lowest velocities (from 11 to 62 feet per year) were present in deep deposits beneath Parcel 2 (Schmidt, 1992A).

Based on Helley (1989) Holocene Bay Mud is present beneath the northern portion of the site. The southern limit of Holocene Bay Mud runs diagonally NW/SE through Parcels 1 and 2.

9. Groundwater Degradation Groundwater beneath a portion of All Purpose Landfill has been degraded by volatile organic chemicals (Figure 3). The results of the City's investigation indicate the plume is approximately 1000 feet wide and 1500-2000 feet in length and extends vertically to a depth of about 50 below ground surface (Schmidt, 1992B). Recent water quality data are shown on the table below and the estimated extent of the plume is shown on Figure 3. It appears that the source of the plume is Parcel 4 of the landfill.

#### Groundwater Quality Data for VOC Plume Beneath All Purpose Landfill

Constituent	"A-Zone" Groundwater Well (G-18)	"B-Zone" Groundwater Well (H-6)	California MCL
cis-1,2-DCE (ppb)	250	30	6
trans-1,2-DCE (ppb)	61	3	10
vinyl chloride (ppb)	37	14	0.5
total dissolved solids <sup>1</sup> (ppm)	3176	2941	500

Data from third quarter 1993 monitoring report and reflects maximum concentrations.

1- The high TDS levels are due to historic saltwater intrusion in the baylands area (see Findings 7 and 9).

## CLOSURE REQUIREMENTS

10. Closure Status Closure of Parcels 1, 1NW and 3/6 will be conducted pursuant to the discharger's *Final Closure and Post Closure Maintenance Plan for Parcel 3/6 and Parcel 1* (Emcon, 1992). The California Integrated Waste Management Board (CIWMB) was the lead agency regarding review and approval of the above Plan. The CIWMB, Santa Clara County Local Enforcement Agency, and Regional Board staff have all approved of the Plan.

Tasks contained in Provision C.1 are based on the following findings:

### **A. Post closure groundwater and surface water monitoring program.**

Groundwater and surfacewater will be monitored as described below and in the attached Self-Monitoring Program. This Order allows for reduction of the frequency of groundwater monitoring from quarterly to semiannual following certification by the dischargers that closure of Parcels 1 and 3/6 is complete. Groundwater will be monitored from 18 wells (15 existing and 3 new wells) as shown in Part B of the attached Self-Monitoring Plan. Surface water in San Tomas Aquinas Creek and the Eastside Drainage Channel immediately east of the landfill will be monitored semi-annually (in February and August) as shown in Part B of the attached Self-Monitoring Plan.

### **B. Closure of Parcels 2 and 4.**

According to the City, Parcels 2 and 4 were closed in the late 1970's and early 1980's before November 27, 1984 when the more stringent closure requirements of Chapter 15 became effective. Parcels 2 and 4 have subsequently been converted into a municipal golf course. The golf course is irrigated with reclaimed waste water from the San Jose POTW. It is the intent of this Order to require that Parcels 2 and 4 continue to be monitored and maintained such that the Prohibitions of this Order are not violated. Task 2 of this Order requires an evaluation of the need to install a leachate collection system to contain and collect leachate from Parcels 1, 2 and 4 and an evaluation of golf course irrigation and fertilizer practices with respect to water quality impacts to the leachate and groundwater beneath the golf course.

### **C. Leachate Collection/Disposal**

Now that the All Purpose Landfill is closed, leachate can no longer be recirculated in the working face of the landfill. Therefore, provisions need to be made for offsite disposal of the leachate (including condensate from the gas collection system). Effective March 30, 1994 leachate is hauled offsite for disposal at San Jose POTW.

#### **D. Completion of Closure Activities**

During the previous two winters ('91/'92 and '92/'93) leachate seeps have been reported on side slopes at All Purpose . The seeps were due to rainwater percolating through the interim cover because final cover had not been constructed. Thus it is important that construction be completed as soon as possible on the final cover for Parcels 1 and 3/6 to prevent percolation of rainwater and development of leachate. Task 4 requires the dischargers submit a technical report acceptable to the Executive Officer, that documents final closure of Parcels 1 and 3/6 by, October 1, 1994. The report shall include as-built drawings, construction quality assurance results with a written summary and all test results and certification by the Engineer of Record.

11. The Board on December 27, 1973, adopted Order No. 73-77, prescribing Waste Discharge Requirements for the disposal of Group 2 wastes at the site. Order No. 73-77 was amended on August 20, 1986, with the adoption of Order No. 86-66, in accordance with Title 23, Division 3, Chapter 15 of the California Code of Regulations (hereinafter called Chapter 15).
12. Beneficial Uses: Groundwater beneath the northern third of the site exceeds the SWRCB's sources of drinking water limit of 3000 ppm total dissolved solids (State Board Resolution No 88-16). However, groundwater beneath the southern two-thirds of the site has TDS levels below 3000 ppm (Kleinfelder, 1992). Therefore, the beneficial uses of groundwater include municipal, industrial and agricultural supply. The beneficial uses of Guadalupe Creek and San Tomas Aquino are as follows:
  - o Wildlife habitat
  - o Contact and Non-contact water recreation
  - o Fish migration and spawning
  - o Cold and warm fresh water habitat

#### **CALIFORNIA ENVIRONMENTAL QUALITY ACT**

13. The City of Santa Clara initiated the environmental review as required by the California Environmental Quality Act (Public Resources Code Section 21000 et. seq.). The City certified the environmental review and adopted a Negative Declaration on August 3, 1993.

#### **OTHER CONSIDERATIONS**

14. On October 9, 1991, the U.S.EPA promulgated regulations (40CFR Parts 257 and 258, or Subtitle D) that apply, in California, to dischargers who own or operate Class II or III landfills at which municipal solid waste is discharged. The majority of the Subtitle D regulations became effective on October 9, 1993.

15. The Regional Board adopted Order No. 93-113 issuing a general amendment of Waste Discharge Requirements to all Municipal Solid Waste Landfills in this Region, including Santa Clara All Purpose Landfill. Order No. 93-113 was issued to bring this Region's Municipal Solid Waste Landfills into compliance with Subtitle D.

## PROCEDURAL REQUIREMENTS

16. The Board adopted a revised Water Quality Plan for the San Francisco Bay Basin (Basin Plan) on December 9, 1991. This Order implements the water quality objectives stated in that plan and its subsequent amendments.
17. The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge, and has provided them with an opportunity to submit their written views and recommendations.
18. The Board in a public meeting heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the dischargers, there agents, successors and assigns, complete closure activities and conduct postclosure maintenance pursuant to authority in Title 23, Chapter 15, Section 2581 and California Water Code Division 7 and the following:

### A. PROHIBITIONS

1. The disposal of waste shall not create a pollution or nuisance as defined in Section 13050 (1) and (m) of the California Water Code.
2. Wastes shall not be allowed to contact ponded water from any source whatsoever.
3. Leachate from wastes and ponded water containing leachate or in contact with refuse shall not be discharged to waters of the State or of the United States.
4. No new waste shall be disposed of or stored upon the All Purpose Landfill.
5. The discharger, or any future owner or operator of this site, shall not cause the following conditions to exist in waters of the State at any place outside the waste management facility:
  - a. Surface Waters

Floating, suspended, or deposited macroscopic particulate matter or foam.



Bottom deposits or aquatic growth.

Adversely alter temperature, turbidity, or apparent color beyond natural background levels.

Visible, floating, suspended or deposited oil or other products of petroleum origin.

Toxic or other deleterious substances to be present in concentrations or quantities which may cause deleterious effects on aquatic biota, wildlife or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentrations.

b. Groundwater

The groundwater shall not be degraded as a result of the waste disposal operation.

B. SPECIFICATIONS

1. All reports pursuant to this Order shall be prepared under the supervision of a registered civil engineer, California registered geologist or certified engineering geologist.
2. Irrigation is allowed but shall not cause saturation of the final cover.
3. The site shall be protected from any washout or erosion of wastes from inundation which could occur as a result of a 100 year 24 hour precipitation event, or as the result of flooding with a return frequency of 100 years.
4. Landfill leachate shall be collected for offsite treatment and discharged to an above-ground, secondarily contained, enclosed tank.
5. The closure of the landfill shall be designed and constructed in conformance with discharger's *Final Closure and Post Closure Maintenance Plan for Parcel 3/6 and Parcel 1* (Emcon, 1992), Chapter 15, and this Order.
6. As portions of the landfill are closed, the exterior surfaces shall be graded to promote lateral runoff of precipitation. The final cover for the landfill will have a minimum slope of three percent plus an allowance for subsidence. The final cover shall be a minimum of 4 feet thick to include, 2 feet of structural base, 1 foot of a low permeability clay barrier, and 1 foot of vegetative soil. The final cover must also meet all other applicable requirements as described in Article 8 of Chapter 15.

7. The dischargers shall monitor the site pursuant to the attached Discharge Monitoring Program and Order No. 93-113 sections 8,9,10,12, and 13. Pursuant to Section 2550.3 of the Revised Article 5, Chapter 15, these Waste Discharge Requirements specify the constituents of concern to which the water quality protection standard of Section 2550.2 of Article 5 applies. Constituents of concern are the waste constituents, reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the waste management unit. The constituents of concern are those listed on Table A of the attached Self-Monitoring Program.
8. In the event of a release of a constituent of concern beyond the Point of Compliance, the site begins a Compliance Period (Sect. 2550.6(a)). During the Compliance Period, the discharger shall perform an Evaluation Monitoring Program and a Corrective Action Program.
9. The discharger shall install any reasonable additional groundwater and leachate monitoring devices required to fulfill the terms of any Discharge Monitoring Program issued by the Executive Officer.
10. Methane and other landfill gases shall be adequately vented, removed from the landfill units, or otherwise controlled to minimize the danger of explosion, adverse health effects, nuisance conditions, or the impairment of beneficial uses of water due to migration through the vadose (unsaturated) zone.
11. This Board considers the property owner and site operator to have continuing responsibility for correcting any problems which arise in the future as a result of this waste discharge or related operations during the active life and postclosure maintenance period.
12. The discharger shall maintain all devices or designed features, installed in accordance with this Order such that they continue to operate as intended without interruption.
13. The discharger shall provide a minimum of two surveyed permanent monuments near the landfill from which the location and elevation of wastes, containment structures, and monitoring facilities can be determined throughout the operation and post-closure maintenance period. These monuments shall be installed by a licensed land surveyor or registered civil engineer.
14. The Regional Board shall be notified immediately of any slope failure occurring in the waste management unit. Any failure which threatens the integrity of containment features or the landfill shall be promptly corrected after approval of the method and schedule by the Executive Officer.
15. The discharger shall submit, within 90 days after the closure of any portion of the landfill, a closure certification report which documents that the area has

been closed according to the requirements of this Order and Chapter 15. The discharger shall certify under penalty of perjury that all closure activities were performed in accordance with the most recently approved closure plan and in accordance with all applicable regulations.

- 16 The discharger shall comply with all applicable provisions of Chapter 15 that are not specifically referred to in this Order.

### C. PROVISIONS

The discharger shall comply with all Prohibitions, Specifications, and Provisions of this Order, immediately upon adoption of this Order or as provided below.

### COMPLIANCE TIME SCHEDULE

1. Except as provided in the schedules given below, the dischargers shall comply with this order immediately upon adoption. The dischargers shall comply with the Waste Containment Specifications, Site Closure Requirements, and provisions specified below according to the following schedules:

#### **Task 1: Vertical Conduit Study**

Completion Date: June 24, 1994

Submit a technical report acceptable to the Executive Officer which contains the results of a Vertical Conduit Study. The Study shall evaluate the potential that any improperly installed or improperly abandoned well could provide a conduit for groundwater pollution migration. The Study shall consider the Regional Board's *"Guidelines for the Identification, Location, and Evaluation of Potential Deep Well Conduits"* dated July 3, 1986. In addition, the study shall evaluate the potential that monitoring wells H-1 through H-4 and L-1 through L-6 are potential vertical conduits since they have been installed through waste and into the underlying sediments. If any monitoring well is determined to be a potential vertical conduit the discharges shall also submit a plan and schedule for abandoning the well and replacing it as necessary.

#### **Task 2: Evaluation of Leachate Accumulation in Parcels 1,2, and 4 and Recommendations for Leachate Collection**

Completion Date: July 29, 1994

The dischargers shall submit a technical report acceptable to the Executive Officer that includes an evaluation of the existing leachate monitoring well network and recommendations for leachate collection. The report should include but not be limited to (1) maps and cross sections showing the elevation of leachate within Parcels 1,2, and 4 with respect to the depth of waste and native groundwater levels, (2) analytical results of the water quality of the all leachate monitoring wells for all compound listed on Table A except Appendix II compounds (note the sampling round

for the this report be submitted in place of the August 1994 leachate sampling round), (3) an evaluation of golf course irrigation and fertilizer practices with respect to water quality impacts to the leachate and groundwater beneath the golf course and (4) a plan and schedule for collecting the leachate in Parcels 1, 2 and 4 as necessary to create an inward hydraulic gradient.

**Task 3: Long Term Leachate Disposal Plan**  
Completion Date: June 24, 1994

The dischargers shall submit a technical report acceptable to the Executive Officer that contains a Long Term Leachate Disposal Plan as discussed in a March 14, 1994 letter from Emcon Associates on behalf of the City of Santa Clara.

**Task 4: Documentation of Installation of Additional Groundwater Monitoring Wells**  
Completion Date: September 23, 1994

The dischargers shall submit a technical report acceptable to the Executive Officer that documents that the monitoring wells listed in Part B of the attached Self-Monitoring Program have been installed.

**Task 5: Documentation of Final Closure of Parcels 1, 1NW, and 3/6**  
Completion Date: October 1, 1994

The dischargers shall submit a technical report acceptable to the Executive Officer that include as-builts drawing, construction quality assurance results with a written summary and all test results and certification by the Engineer of Record. The report shall include an updated topographic map of the entire All Purpose Landfill (i.e., Parcels 1, 1NW, 2, 3/6 and 4.).

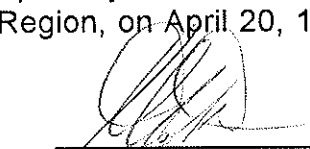
**Task 6: Documentation of Leachate Collection System Installation and Start-Up in Parcels 1, 2 and 4.**  
Completion Date: October 28, 1994

The dischargers shall submit a technical report acceptable to the Executive Officer that documents installation and startup of a leachate collection system in Parcels 1,2,and 4, if necessary, as proposed in the submittal under Task 2 above.

2. The dischargers shall remove and relocate any wastes which are discharged after the date of adoption of this Order in violation of these requirements.
3. The dischargers shall immediately notify the Board of any flooding, equipment failure, slope failure, or other change in site conditions which could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.
4. The dischargers shall maintain a copy of this Order at the site so as to be

- available at all times to site operating personnel.
5. The dischargers shall permit the Board or its authorized representative, upon presentation of credentials:
    - a. Immediate entry upon the premises on which wastes are located or in which any required records are kept.
    - b. Access to copy any records required to be kept under the terms and conditions of this Order.
    - c. Inspection of any treatment equipment, monitoring equipment, or monitoring method required by this Order or by any other California State Agency.
    - d. Sampling of any discharge or groundwater governed by this Order.
  6. This Board's Order No. 73-77 is hereby rescinded.
  7. These requirements do not authorize commission of any act causing injury to the property of another or of the public; do not convey any property rights; do not remove liability under federal, state or local laws; and do not authorize the discharge of wastes without appropriate permits from other agencies or organizations.
  8. This Order is subject to Board review and updating, as necessary, to comply with changing State or Federal laws, regulations, policies, or guidelines; changes in the Board's Basin Plan; or changes in the discharge characteristics.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing is a full, complete, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on April 20, 1994.

  
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Steven R. Ritchie  
Executive Officer

Attachments:      Figure 1. Site Location Map  
                         Figure 2. Facility Map  
                         Self-Monitoring Program

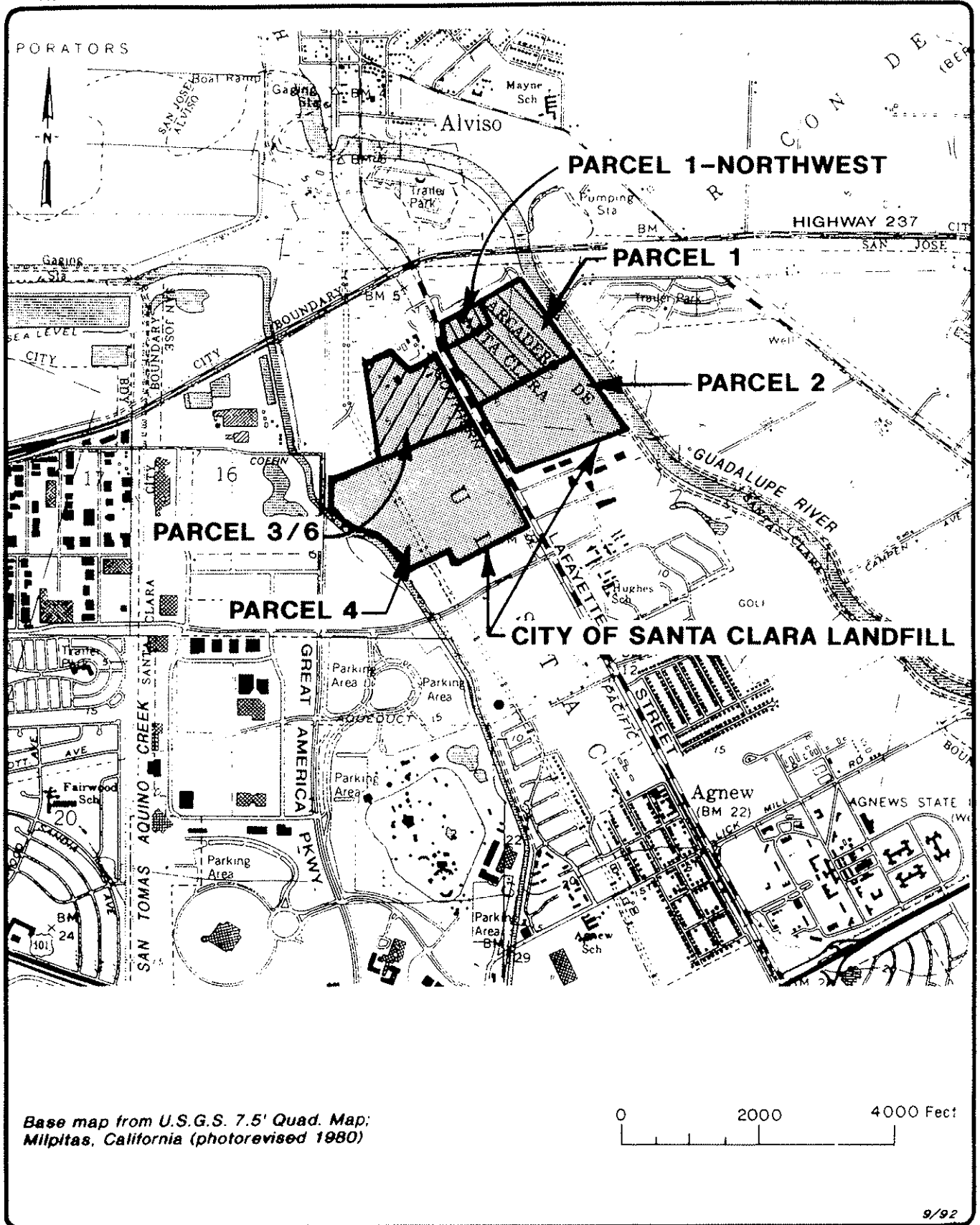


Figure 1. Site location Map - Santa Clara All Purpose Landfill, Santa Clara, California.

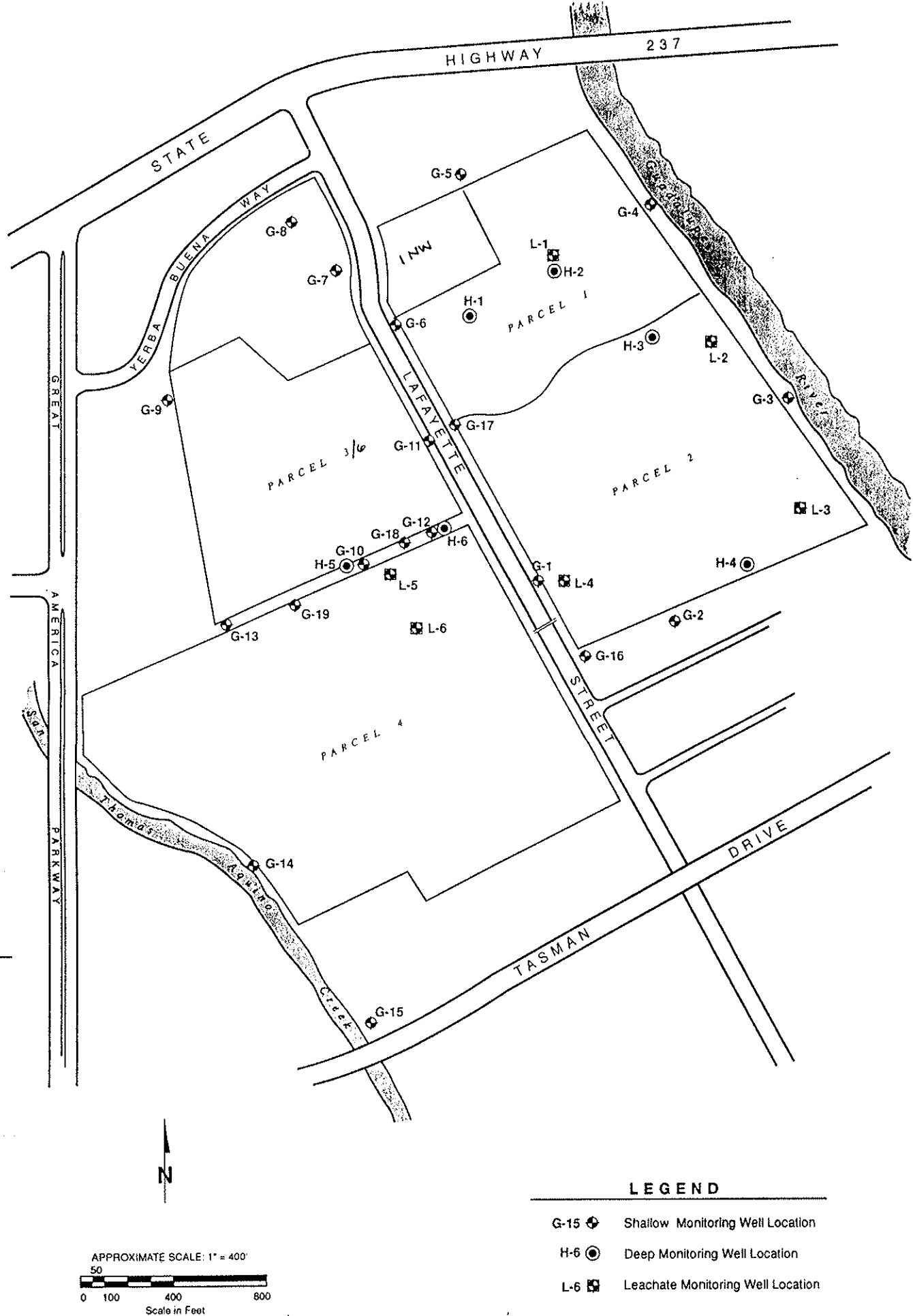


Figure 2. Facility Map - Santa Clara All Purpose Landfill, Santa Clara, California.

## References:

Emcon Associates, 1992, Final Closure and Post Closure Maintenance Plan for Parcel 3/6 and Parcel 1, Santa Clara All Purpose Landfill.

Helley, E.J., and LaJoie, K.R., 1979, Flatland Deposits of the San Francisco Bay Region, California - Their Geology and Engineering Properties, and Their Importance to Comprehensive Planning. U.S. Geological Survey Professional Paper 943, 88p.

Helley, E.J. and Wesling, J.R., 1989, Quaternary Geologic Map of the Milpitas Quadrangle, Alameda and Santa Clara Counties, USGS Open File Report 89-671.

Kleinfelder Inc., 1993, Article 5 Technical Report, The All Purpose Landfill, Santa Clara, CA, 21 p.

Santa Clara Valley Water District, 1989, Standards for the Construction and Destruction of Wells and other Deep Excavations in Santa Clara County - Appendix A: Geology and Water Quality.

Santa Clara Valley Water District, 1980, Saltwater Intrusion Investigation in the Santa Clara County Baylands Area, California, 115p.

Schmidt and Associates, Kenneth D., 1992A, Hydrogeologic Conditions at the City of Santa Clara Landfill, report dated April 28, 1992, prepared for the City of Santa Clara.

Schmidt and Associates, Kenneth D., 1992B, Results of New Monitoring Wells at Parcel 4 at the City of Santa Clara Landfill, report dated June 30, 1992, prepared for the City of Santa Clara.

U.S.EPA, 1989, CERCLA Site Inspection Summary Report: Santa Clara All Purpose Landfill, Report dated February 24, 1989.



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

DISCHARGE MONITORING PROGRAM

FOR

CITY OF SANTA CLARA  
and  
MISSION TRAIL WASTE SYSTEMS

SANTA CLARA ALL PURPOSE LANDFILL  
INACTIVE CLASS III SOLID WASTE DISPOSAL SITE

CITY OF SANTA CLARA

SANTA CLARA COUNTY

ORDER NO. 94-050

CONSISTS OF

PART A

AND

PART B

## PART A

### A. GENERAL

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No.73-16. This Discharge Monitoring Program is issued in accordance with Provision 7 of Regional Board Order No. 94-050.

The principal purposes of a discharge monitoring program are: (1) to document compliance with waste discharge requirements and prohibitions established by the Board, (2) to facilitate self-policing by the waste dischargers in the prevention and abatement of pollution arising from waste discharge, (3) to develop or assist in the development of standards of performance, and toxicity standards, (4) to assist the dischargers in complying with the requirements of Article 5, Chapter 15 as revised July 1, 1991.

### B. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analyses shall be performed according to the most recent version of EPA Standard Methods and in accordance with an approved sampling and analysis plan.

Water and waste analysis shall be performed by a laboratory approved for these analyses by the State of California. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Regional Board.

All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

### C. DEFINITION OF TERMS

1. A grab sample is a discrete sample collected at any time.
2. Receiving waters refers to any surface water which actually or potentially receives surface or groundwater which pass over, through, or under waste materials or contaminated soils. In this case the groundwater beneath and adjacent to the landfill areas, the surface runoff from the site, and Coyote Creek.
3. Standard observations refer to:
  - a. Receiving Waters
    - 1) Floating and suspended materials of waste origin: presence or absence, source, and size of affected area.
    - 2) Discoloration and turbidity: description of color, source, and size of affected area.
    - 3) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.

d. Perimeter of the waste management unit.

- 1) Evidence of liquid leaving or entering the waste management unit, estimated size of affected area and flow rate. (Show affected area on map)
- 2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
- 3) Evidence of erosion and/or daylighted refuse.

c. The waste management unit.

- 1) Evidence of ponded water at any point on the waste management facility.
- 2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
- 3) Evidence of erosion and/or daylighted refuse.
- 4) Standard Analysis (SA) and measurements are listed on Table A (attached)

D. SAMPLING, ANALYSIS, AND OBSERVATIONS

The dischargers is required to perform sampling, analyses, and observations in the following media:

1. Groundwater per Section 2550.7(b) and
2. Surface water per Section 2550.7(c)

and per the general requirements specified in Section 2550.7(e) of Article 5, Chapter 15.

E. RECORDS TO BE MAINTAINED

Written reports shall be maintained by the dischargers or laboratory, and shall be retained for a minimum of five years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Board. Such records shall show the following for each sample:

1. Identity of sample and sample station number.
2. Date and time of sampling.
3. Date and time that analyses are started and completed, and name of the personnel performing the analyses.
4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used.
5. Calculation of results.

6. Results of analyses, and detection limits for each analysis.

F. REPORTS TO BE FILED WITH THE BOARD

1. Written detection monitoring reports shall be filed by the 15th day of the month following the report period. In addition an annual report shall be filed as indicated in F.3 below. The reports shall be comprised of the following:

- a. Letter of Transmittal

A letter transmitting the essential points in each report should accompany each report. Such a letter shall include a discussion of any requirement violations found during the last report period, and actions taken or planned for correcting the violations. If the dischargers have previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred in the last report period this shall be stated in the letter of transmittal. Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer at the level of vice president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct.

- b. Each monitoring report shall include a compliance evaluation summary. The summary shall contain:

- 1) A graphic description of the velocity and direction of groundwater flow under/around the waste management unit, based upon the past and present water level elevations and pertinent visual observations.
- 2) The method and time of water level measurement, the type of pump used for purging, pump placement in the well; method of purging, pumping rate, equipment and methods used to monitor field pH, temperature, and conductivity during purging, calibration of the field equipment, results of the pH, temperature conductivity and turbidity testing, well recovery time, and method of disposing of the purge water.
- 3) Type of pump used, pump placement for sampling, a detailed description of the sampling procedure; number and description of equipment, field and travel blanks; number and description of duplicate samples; type of sample containers and preservatives used, the date and time of sampling, the name and qualifications of the person actually taking the samples, and any other observations.

- c. A map or aerial photograph shall accompany each report showing observation and monitoring station locations.

- d. Laboratory statements of results of analyses specified in Part B must be included in each report. The director of the laboratory whose name appears on

the laboratory certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Board.

- 1) The methods of analyses and detection limits must be appropriate for the expected concentrations. Specific methods of analyses must be identified. If methods other than EPA approved methods or Standard Methods are used, the exact methodology must be submitted for review and approved by the Executive Officer prior to use.
  - 2) In addition to the results of the analyses, laboratory quality assurance/quality control (QA/QC) information must be included in the monitoring report. The laboratory QA/QC information should include the method, equipment and analytical detection limits; the recovery rates; an explanation for any recovery rate that is less than 80%; the results of equipment and method blanks; the results of spiked and surrogate samples; the frequency of quality control analysis; and the name and qualifications of the person(s) performing the analyses.
  - e. An evaluation of the effectiveness of the leachate monitoring or control facilities, which includes an evaluation of leachate buildup within the disposal units, a summary of leachate volumes removed from the units, and a discussion of the leachate disposal methods utilized.
  - f. A summary and certification of completion of all standard observations for the waste management unit, the perimeter of the waste management unit, and the receiving waters.
2. CONTINGENCY REPORTING
- a. A report shall be made by telephone of any seepage from the disposal area immediately after it is discovered. A written report shall be filed with the Board within five days thereafter. This report shall contain the following information:
    - 1) a map showing the location(s) of discharge;
    - 2) approximate flow rate;
    - 3) nature of effects; i.e. all pertinent observations and analyses; and
    - 4) corrective measures underway or proposed.

3. REPORTING

By January 31 of each year the dischargers shall submit an annual report to the Board covering the previous calendar year. This report shall contain:

- a. Tabular and graphical summaries of the monitoring data obtained during the previous year; the report should be accompanied by a 5<sup>1</sup>/<sub>4</sub>" computer data disk, MS-DOS ASCII format, tabulating the year's data.
- b. A comprehensive discussion of the compliance record, and the corrective actions taken or planned which may be needed to bring the dischargers into full

compliance with the waste discharge requirements.

- c. A map showing the area, if any, in which filling has been completed during the previous calendar year.
- d. A written summary of the groundwater analyses indicating any change in the quality of the groundwater.
- e. An evaluation of the effectiveness of the leachate monitoring/ control facilities, which includes an evaluation of leachate buildup within the disposal units, a summary of leachate volumes removed from the units, and a discussion of the leachate disposal methods utilized.

4. WELL LOGS

A boring log and a monitoring well construction log shall be submitted for each sampling well established for this monitoring program, as well as a report of inspection or certification that each well has been constructed in accordance with the construction standards of the Department of Water Resources. These shall be submitted within 30 days after well installation.

Part B

1. DESCRIPTION OF OBSERVATION STATIONS AND SCHEDULE OF OBSERVATIONS

A. GROUNDWATER and SURFACE WATER MONITORING - Report Quarterly

Groundwater and surface water shall be monitored as outlined below and on Table A (Attached).

**Groundwater Monitoring Points - Santa Clara All Purpose Landfill**

Parcel No.	Acres	Detection Monitoring Wells	Background Wells
1 NW	8	G-5,	NA
1	35	G-4, [G-21], [H-7]	NA
2	40	G-4, G-3	G-2
3/6	46	[G-22], G-11	G-9
4	68	G-13	G-14, G-15
VOC Plume	+/- 40	G-1, 10, 12, 17, 18, 19, H-5, and H-6	G-14 , G-15

"G" Groundwater monitoring wells monitor the uppermost shallow water bearing zone (known commonly as the "A-Zone") - typically present at a depth of 20-25 feet below the natural land surface.

"H" Groundwater monitoring wells monitor the second uppermost shallow water bearing zone (known commonly as the "B-Zone")- typically present at a depth of 30-45 feet below the natural land surface.

"NA" - Not applicable - Other landfill Parcels are upgradient of Parcels 1NW and 1.

New monitoring wells to be installed:

[G-21] - To be installed at northeast corner of Parcel 1 (well pair with H-7) to monitor 1000 ft gap between wells G-4 and G-5 .

[H-7] - To be installed as a "B-Zone" well at northeast corner of Parcel 1 (well pair with G-21).

[G-22] - To be installed midway along north limit of Parcel 3/6. G-22 will replace wells G-7 and G-8 which are located an unacceptable distance downgradient of the limit of waste. G-7 and G-8 are currently located 400 and 600 feet respectively downgradient of the limit of waste.

Surface water in San Tomas Aquinas Creek and the Eastside Drainage Channel immediately east of the landfill will be monitored semi-annually (in February and August) as shown below:

### Surfacewater Monitoring Points - Santa Clara All Purpose Landfill

Surface Water Body	Station No.	Location
San Tomas Creek - Upstream	SW-1	Within 100 ft. upstream of Tasman Drive
San Tomas Creek- Downstream	SW-2	Within 100 ft. downstream of Great American Parkway
Eastside Drainage Channel - Upstream	SW-3	Within 100 ft. upstream of SE corner of Parcel 2.
Eastside Drainage Channel - Downstream	SW-4	Prior to discharge into Stormwater Retention Basin

Any modification in the monitoring program must be approved in writing by the Executive Officer.

#### B. FACILITIES MONITORING

The Dischargers shall inspect all facilities to ensure proper and safe operation once per quarter and report quarterly. The facilities to be monitored shall include, but not be limited to:

- a. Leachate Collection and Removal System
- b. Surface water impoundment
- c. Leachate handling facilities
- d. Perimeter diversion channels
- e. Leachate Management facilities and secondary containment.



I, Steven R. Ritchie, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedures set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in this Board's Order No. 94-050.
2. Is effective on the date shown below.
3. May be reviewed or modified at any time subsequent to the effective date, upon written notice from the Executive Officer.



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Steven R. Ritchie  
Executive Officer

Date Ordered: April 20, 1994

Attachment:        Table A - Schedule for Sampling, Measurement, and Analysis  
                         Figure 1. Site Location Map  
                         Figure 2. Facility Map

TABLE A  
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS  
SANTA CLARA ALL PURPOSE LANDFILL  
SANTA CLARA, SANTA CLARA COUNTY

Measurement	Groundwater	Surface Water (at low tide)	Leachate
Type of sample	G	G	G
Flow Rate	-	estimate (gpm or cfs)	(gallons per day & per month)
Bioassay 96-hr % survival - static	-	Y	-
Elec. Cond. (umhos/cm)	S	S	S
Total Nitrogen (mg/l)	S	S	S
Total Kjeldahl Nitrogen	S	S	S
Nitrate Nitrogen	S	S	S
Bicarbonate	S	S	S
Chloride	S	S	S
Total Organic Carbon	S	S	S
Total Dissolved Solids	S	S	S
Water Elevations (feet mean sea level)	S	-	S
Turbidity (NTU's)	S	S	-
pH (units)	S	S	S
Dissolved Oxygen (mg/l and % saturation)	-	S	-
Temperature (oC)	S	S	S
Total Metals (unfiltered)EPA Method 200.7 Cu, Cd, Pb, Hg, Ni, Se, Zn	Y	Y	Y
Total Selenium by Hydride Method	Y	Y	Y
EPA Method 8260 (1)	S	S	S
Total Suspended Sediment	-	S	-
40CFR Part 258 (SubTitle D) - Appendix II	5	5	5

## LEGEND FOR TABLE A

**IMPORTANT: Postclosure monitoring of All Purpose Landfill must be conducted in accordance with Order No. 93-113 sections 8,9,10,12, and 13.**

### TYPES OF SAMPLES

G = grab sample  
C-24 = 24 hr. composite  
Cont. = continuous sampling  
DI = depth integrated sample  
BS = bottom sediment sample  
O = observation  
- = none required

### TYPES OF STATIONS

I = intake or influent stations  
E = effluent sampling stations  
D = discharge point sampling stations  
C = receiving water sample stations  
L = basin and/or pond levee stations  
B = bottom sediment station  
G = groundwater station

### FREQUENCY OF SAMPLING

H = once each hour  
D = once each day  
W = once each week  
M = once each month

Y = once each year in August

S- twice each year in February and August

5- once every five years beginning with Reporting Period that ends March 31, 1996.

V = varies; total ammonia nitrogen shall be analyzed and un-ionized ammonia calculated whenever fish bioassay test results fail to meet the specified percent survival

2/W = 2 days per week  
5/W = 5 days per week  
2/M = 2 days per month  
2/y = once in February and August  
Q = quarterly, once in March, June, September, and December

W/M = weekly for first three months after startup of operations and reduced to monthly thereafter

2D = every 2 days  
2W = every 2 weeks  
3M = every 3 months  
Cont = continuous

Q/Y = quarterly for first year after startup of operations and reduced to annually thereafter

(1) - Method 8260 required only once each year in August for background wells G-2, G-14, and G-15.

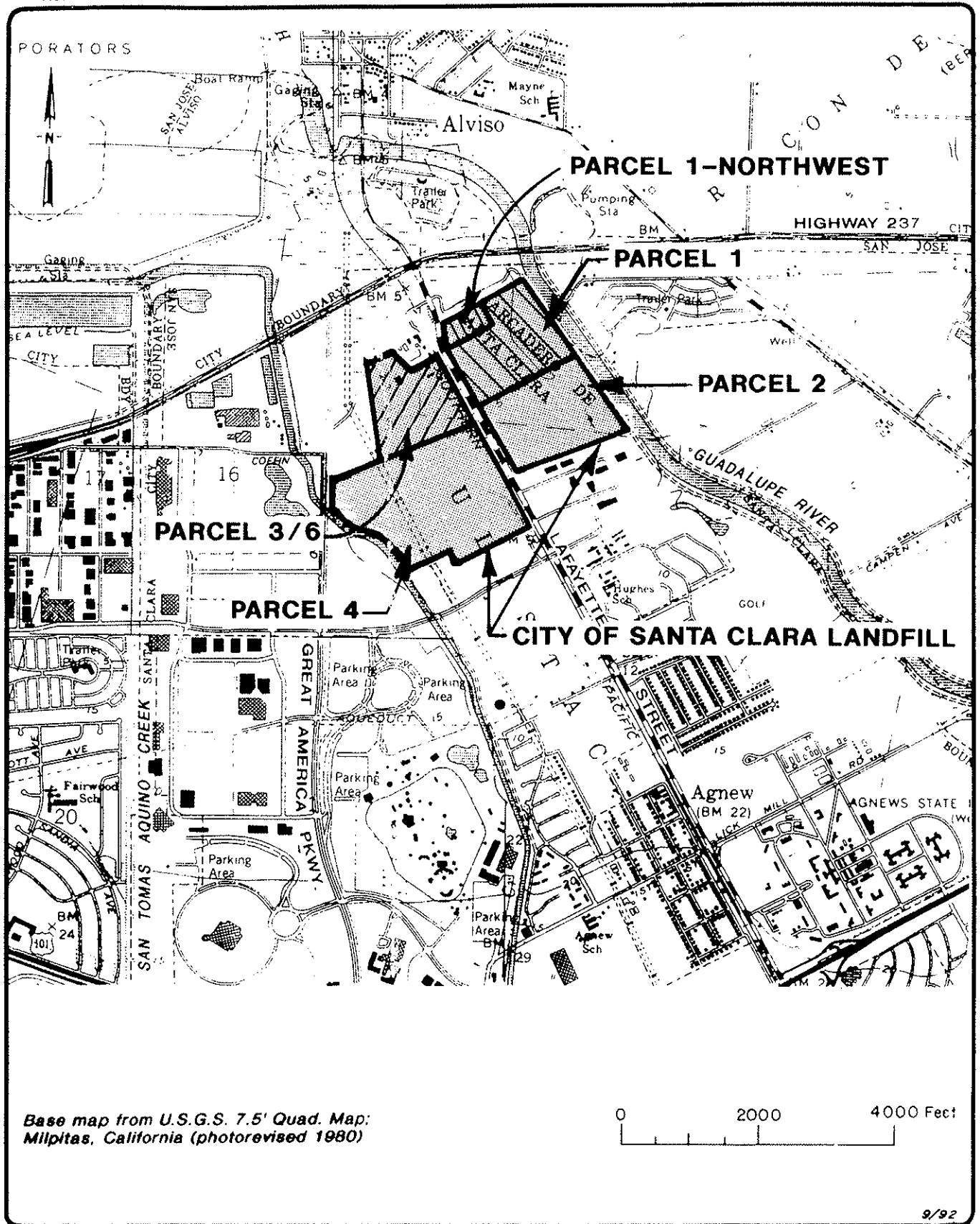


Figure 1. Site location Map - Santa Clara All Purpose Landfill, Santa Clara, California.

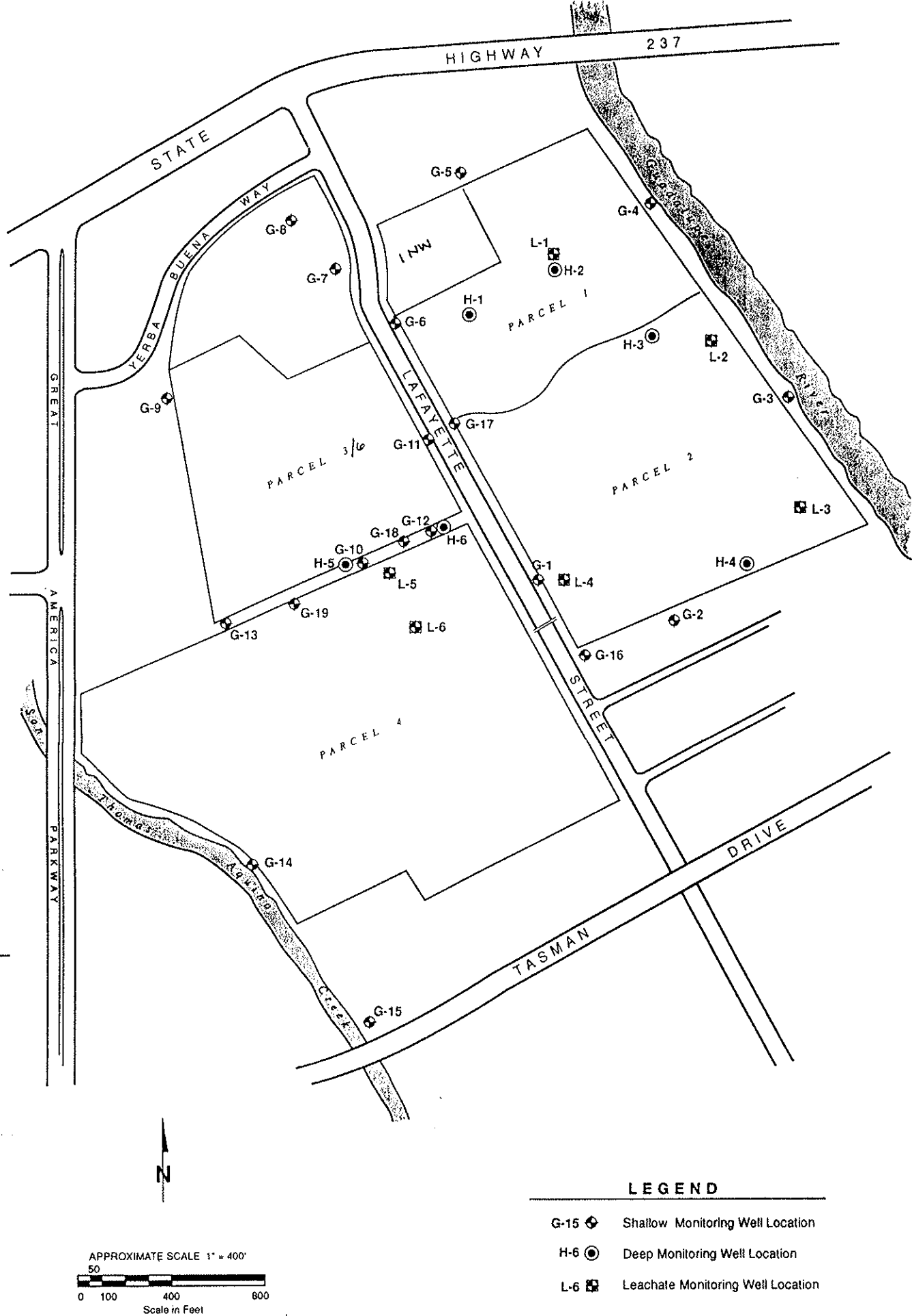


Figure 2. Facility Map - Santa Clara All Purpose Landfill, Santa Clara, California.